

IN THE CLAIMS:

1-47. (Canceled)

48. (Currently amended) An isolated nucleic acid ~~according to claim 47~~, wherein said isolated nucleic acid encodes a plant delta-6 desaturase, and wherein said plant delta-6 desaturase comprises at least one of SEQ ID NO: 6, SEQ ID NO: 12 or SEQ ID NO: 20.

49-50. (Canceled).

51. (Currently amended) A genetic construct comprising the isolated nucleic acid according to claim 47 48 or 58-59.

52. (Original) A vector comprising the genetic construct according to claim 51.

53. (Original) A cell comprising the vector according to claim 52.

54. (Currently amended) A transformed plant comprising the nucleic acid according to claim 47 48 or 58-59.

55. (Currently amended) A method of producing a plant with increased GLA comprising transforming a plant cell with a nucleic acid according to claim 47 48 or 58-59 and regenerating said plant from said plant cell.

56. (Previously presented) A transformed plant comprising the genetic construct according to claim 51.

57. (Previously presented) A method of producing a plant with increased GLA comprising transforming a plant cell with the genetic construct according to claim 51 and regenerating said plant from said plant cell.

58. (Currently amended) An isolated nucleic acid molecule ~~according to claim 48~~ coding for a plant delta-6 desaturase, whereby said nucleic acid molecule hybridizes under stringency conditions to the complement of a polynucleotide molecule comprising the nucleotide sequence of SEQ ID NO: 4, and wherein said stringency conditions comprise hybridization to filter-bound DNA in 6X SSC, 1X Denharts solution, 0.05 % sodium pyrophosphate, 100µg/ml denaturated salmon sperm DNA at 60°C, and washing in 4X, 2X, and 1X SET at 60°C.

59. (Currently amended) An isolated nucleic acid molecule ~~according to claim 48~~ coding for a plant delta-6 desaturase, whereby said nucleic acid molecule hybridizes under stringency conditions to the complement of a polynucleotide molecule encoding a ~~polypeptide fragment~~ a plant delta-6 desaturase which comprises at least one of

- ~~(i) residue 156 to residue 163 of SEQ ID NO: 5~~ SEQ ID NO: 6; ~~or~~
- ~~(ii) residue 196 to residue 200 of SEQ ID NO: 5~~ SEQ ID NO: 12; ~~or~~
- ~~(iii) residue 371 to residue 377 of SEQ ID NO: 5~~ SEQ ID NO: 20; ~~or~~
- ~~(iv) any combination of (i), (ii) and (iii);~~

and wherein said stringency conditions comprise hybridization to filter-bound DNA in 6X SSC, 1X Denharts solution, 0.05 % sodium pyrophosphate, 100µg/ml denaturated salmon sperm DNA at 60°C, and washing in 4X, 2X, and 1X SET at 60°C.